ABSTRACT

A data processing system comprises a local probe storage array having a plurality of sensors for reading data from a storage surface. A plurality of data processing elements are mounted on the storage array. Each data processing element is connected to different sensor of the array for processing data read by the connected sensor. The data processing elements may be logic gates for performing simple comparisons with input data. Alternatively, each data processing element may comprise more complex logic circuitry for performing more complex functions based on data read by the storage array. Such function may involve a combination of data read by the storage array and data input to the data processing system from an another source. Each data processing element may comprise a complete microprocessor system responsive to data read from the storage array. It will be appreciated that data processing elements may thought of as collectively constituting a form of CPU capable of acting upon data read from the storage array in a parallel and therefor high speed fashion.